

Solar inverters
for Asia

Solar inverters
for Europe

Solar inverters
for America

Solar inverters
for the Earth

EU-SOLAR LTD.

Hungary 7635 Pécs, Abaligeti út 14

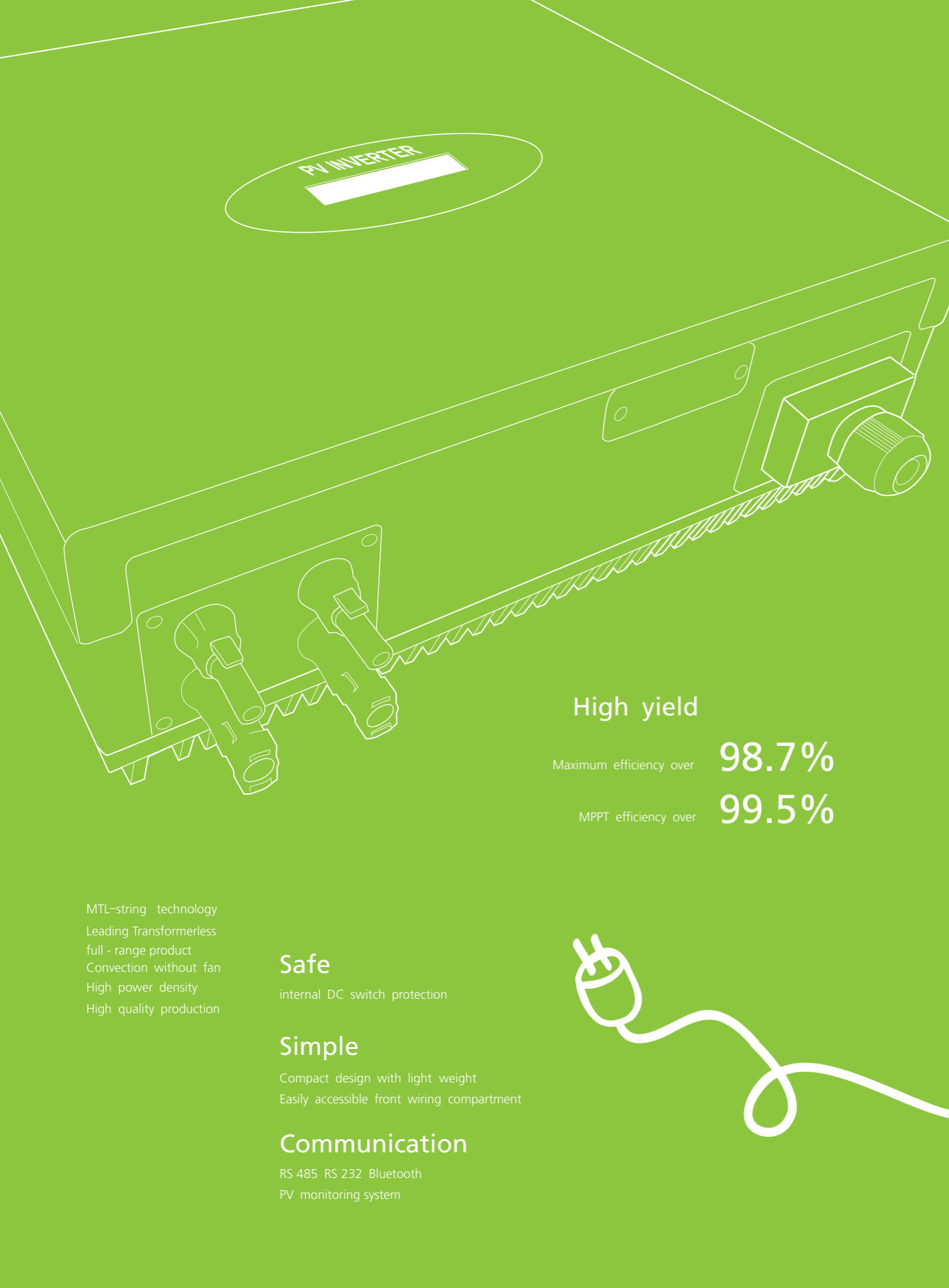
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Green Inverters from

Growatt
powering tomorrow



PV INVERTER

High yield

Maximum efficiency over **98.7%**

MPPT efficiency over **99.5%**

- MTL-string technology
- Leading Transformerless
- full - range product
- Convection without fan
- High power density
- High quality production

Safe

internal DC switch protection

Simple

Compact design with light weight
Easily accessible front wiring compartment

Communication

RS 485 RS 232 Bluetooth
PV monitoring system

A New Milestone for Photovoltaic

As the CEO of Growatt New Energy, I am very honored to recommend our excellent team, our high-efficient and cost-effective inverters and other supporting service to all the partners.

Known by all the customers, Growatt is a new energy company based on a R&D team with 10 years experience in PV and power industry. Growatt team has always been committed to more cost-effective new energy product design and maintains sustainable progress. The technology and product performance has been assessed A level by world first-class certification company and EPC company.

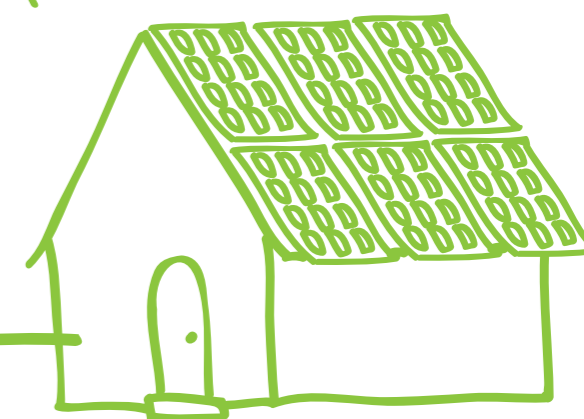
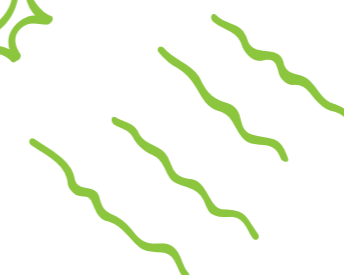
From 2010, Growatt start the R&D and sales for the photovoltaic inverter, until now Growatt has reached an installation of 600MW worldwide, quickly growing as the world leading supplier of cost-effective inverters with high efficiency.

Growatt has a full production line of inverters from 1kW to 1MW, together with our smart monitoring system, which are applicable for residential & commercial roof and ground plants. In residential application, Growatt provides more efficient and lighter inverters, winning a more extensive global market coverage compared with competitors, while offering simple and more intelligent experience for home users. In utility scale and large power station, more stable and effective inverters together with smart monitoring system, also

give customers more cost competitive advantage.

Together with the efficient inverters, Growatt provides every customer excellent pre-sales and after-sales service, to ensure the matching products for customized demands, perfect product application service, and prompt maintenance guide. For customers, Growatt is more than just a supplier, but a more reliable partner.

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About Growatt

Growatt New Energy Technology Co., Ltd was established on May 2010, a professional and vigorous new energy company focusing on photovoltaic inverters. Until now, Growatt has reached nearly 600MW installation worldwide, famous as a world leading manufacturer of cost-effective photovoltaic inverters with high efficiency.

Our Products

Growatt offers a full line of PV inverters from 1kW to 1MW, together with our smart monitoring systems, which are completely applicable for residential & commercial roof and ground plants. Growatt 5000TL is honored to be the first Asian PV inverter with A+ from Photon Lab; Growatt 5000MTL has also perfectly achieved A & A in Photon Lab in Dec. 2012. Growatt inverters, as the representative of high efficiency, conform to the safety, power level, and grid standards of nearly 20 countries in Europe, Americas, Australia, and Asian. With the sales of RMB 300 million in 2012, Growatt is the top Chinese inverter manufacturer, being the largest exporter in China for 2 years.

Our R&D and Service Team

With a R&D team more than 100 engineers, 40% of the staff, who has been deeply engaged in the photovoltaic industry for 10 years, Growatt takes the mission to increase the inverter availability and efficiency, putting continuous innovation to make Growatt inverter easier for installation and operation, and more cost-effective for solar plant construction. Except the R&D team, building an elite service team is Growatt's another goal. In Growatt, service is not only the basic principle, but also blends into the hearts of the staff, and reflects in the daily work of everyone. In order to improve the service system worldwide, Growatt has established branch offices in Frankfurt, Sydney, Huston, Shenzhen, Hongkong, and Beijing

Our Achievement

At the start of 2012, Sequoia Capital and China Merchants have invested in Growatt strategically, which is the basis for the high and stable development of Gowatt. With the excellent performance in both domestic and international market, Growatt has been awarded with some honorable titles, like "Top 10 Inverter Suppliers in China", "2012 Top 100 Enterprises of Innovation and Growth in China", "2012 The Enterprises with The Most Growtt".

Growatt, with the big steps, is developing to be the Growatt Group, which will consist of 6 business departments, i.e. 1-20kW photovoltaic inverters, 100kW-1MW central inverters, solar system EPC, electric vehicle charger, backup energy system, and investment business dept., and determined to be the leader in the power electronics industry.

Certification



G59 G83 VDE-AR-N4105 RD1663 BDEW LVRT

With world-class components suppliers

Growatt chooses world-class suppliers to ensure the high quality of its products. With top-class partners Growatt provides inverters with high quality and efficiency to the whole world.

Mos IGBT



IC



Fuse



Capacitor



Current Transducer



Relay



Diode



MCU



Growatt 1000TL / 1500TL / 2000TL / 3000TL

Leading - edge Technology

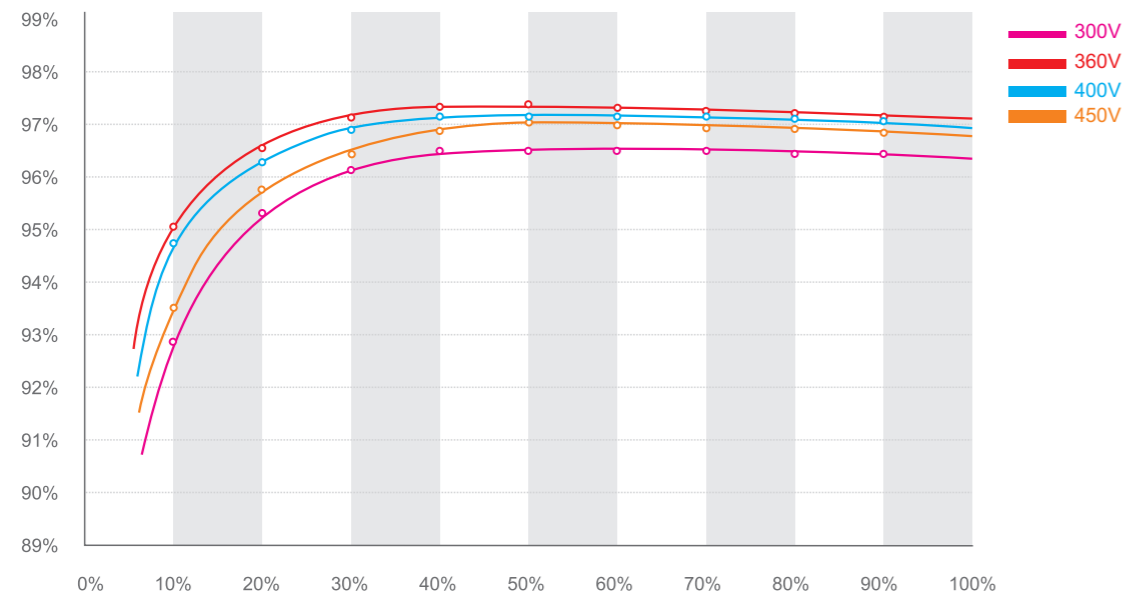
- ▶ Maximum efficiency of 97.3% and wide input voltage range
- ▶ Internal DC switch
- ▶ Transformerless GT topology
- ▶ Compact design
- ▶ MTL - String
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation
- ▶ Comprehensive Growatt warranty program

Europe ENS

- ▶ Simple national setting of line supply monitoring(ENS)
- ▶ Easy country configuration
- ▶ Multi - language display
- ▶ Currently available for Germany, Austria, France, Switzerland, UK, Italy and Spain etc.



3k efficiency



Datasheet

	Growatt 1000TL	Growatt 1500TL	Growatt 2000TL	Growatt 3000TL
Input Data				
Max. DC power	1300W	1800W	2300W	3200W
Max. DC voltage	450V	450V	500V	500V
Start voltage	90V	150V	150V	150V
PV voltage range	70V - 450V	100V - 450V	100V - 500V	100V - 500V
MPPT work voltage range/ nominal voltage	70V-450V/180V	120V-450V/360V	120V-500V/360V	120V-500V/360V
Full load dc voltage range	110V - 400V	175V - 450V	195V-450V	250V - 450V
Number of MPP trackers /strings per MPP tracker	1 / 1	1 / 1	1 / 2	1 / 2
Max. input current /per string	10A/10A	10A/10A	12A/12A	15A/15A
Output (AC)				
Rated AC output power	1000W	1600W	2000W	2850W
Max. AC power	1100W	1650W	2200W	3000W
Max. output current	5.5A	8A	11A	15A
AC nominal voltage; range	220V/230V/240V; 180Vac-280Vac	220V/230V/240V; 180Vac-280Vac	220V/230V/240V; 180Vac-280Vac	220V/230V/240V; 180Vac-280Vac
AC grid frequency ;range	50Hz, 60Hz; ±5Hz	50Hz, 60Hz; ±5Hz	50Hz, 60Hz; ±5Hz	50Hz, 60Hz; ±5Hz
Power factor	1	1	1	1
THDI	<3%	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase	Single phase
Efficiency				
Max. efficiency	97%	97%	97.3%	97.3%
Euro-eta	95.5%	96.5%	96.5%	96.5%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	yes	yes	yes	yes
DC switch rating for each MPPT	yes	yes	yes	yes
Output over current protection	yes	yes	yes	yes
Output overvoltage protection-varistor	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes	yes
General Data				
Dimensions (W / H / D) in mm	360/329/132	360/329/132	360/329/132	360/329/132
Weight	11.5KG	11.5KG	11.7KG	12.2KG
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)
Self-Consumption night	< 0.5 W	< 0.5 W	< 0.5 W	< 0.5 W
Topology	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0~95%	0~95%	0~95%	0~95%
Features				
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD	LCD
Interfaces: RS232/RS485/ Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt	yes / opt
Certificates and Approvals				

CE, VDE 0126-1-1, G83/1-1, G59/2, RD1663, EN50438, VDE-AR-N4105, IEC-62109, ENEL-Guide, CEI 0-21

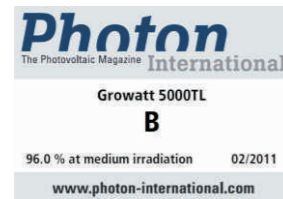
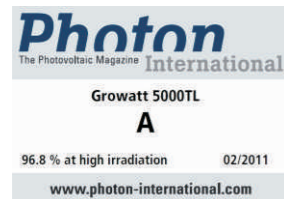
Growatt 4000TL / 4400TL / 5000TL

Leading - edge Technology

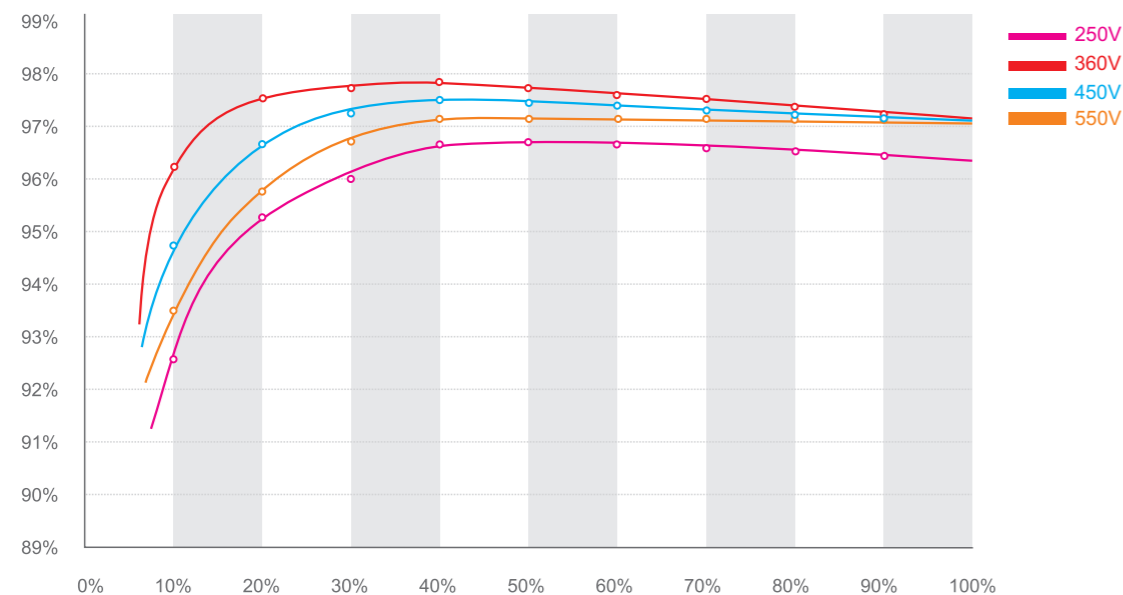
- ▶ Maximum efficiency of 97.8% and wide input voltage range
- ▶ Internal DC switch
- ▶ Transformerless GT topology
- ▶ Compact design
- ▶ MTL - String
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation
- ▶ Comprehensive Growatt warranty program

Europe ENS

- ▶ Simple national setting of line supply monitoring(ENS)
- ▶ Easy country configuration
- ▶ Multi - language display
- ▶ Currently available for Germany, Austria, France, Switzerland, UK, Italy and Spain etc.



5k efficiency



Datasheet

	Growatt 4000TL	Growatt 4400TL	Growatt 5000TL
Input Data			
Max. DC power	4200W	4600W	5000W/5200W *
Max. DC voltage	580V	580V	580V
Start voltage	150V	150V	150V
PV voltage range	100V - 580V	100V - 580V	100V - 580V
MPPT work voltage range/ nominal voltage	120V-580V/360V	120V-580V/360V	120V-580V/360V
Full load dc voltage range	250V - 500V	250V - 500V	250V - 500V
Number of MPP trackers /strings per MPP tracker	1 / 3	1 / 3	1 / 3
Max. input current /per string	20A/20A	20A/20A	20A/20A
Output (AC)			
Rated AC output power	3680W	4200W	4600W
Max. AC power	4000W	4400W	4600W/5000W
Max. output current	16A	21A	22.7A
AC nominal voltage; range	220V/230V/240V; 180Vac-280Vac	220V/230V/240V; 180Vac-280Vac	220V/230V/240V; 180Vac-280Vac
AC grid frequency ;range	50Hz, 60Hz;±5Hz	50Hz, 60Hz;±5Hz	50Hz, 60Hz;±5Hz
Power factor	1	1	1
THDI	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase
Efficiency			
Max. efficiency	97.8%	97.8%	97.8%
Euro-eta	97.4%	97.4%	97.4%
MPPT efficiency	99.5%	99.5%	99.5%
Protection Devices			
DC reverse polarity protection	yes	yes	yes
DC switch rating for each MPPT	yes	yes	yes
Output over current protection	yes	yes	yes
Output overvoltage protection-varistor	yes	yes	yes
Ground fault monitoring	yes	yes	yes
Grid monitoring	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes
General Data			
Dimensions (W / H / D) in mm	406/406/192	406/406/192	406/406/192
Weight	21KG	21KG	21KG
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)
Self-Consumption night	< 0.5 W	< 0.5 W	< 0.5 W
Topology	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0~95%	0~95%	0~95%
Features			
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD
Interfaces: RS232/RS485/ Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt
Certificates and Approvals			

CE, VDE 0126-1-1, DK5940, G83/1-1, G59/2, RD1663, EN50438, VDE-AR-N4105, CEI-021, IEC-62109, ENEL-Guide

Growatt 2500 MTL / 3000 MTL

Leading - edge Technology

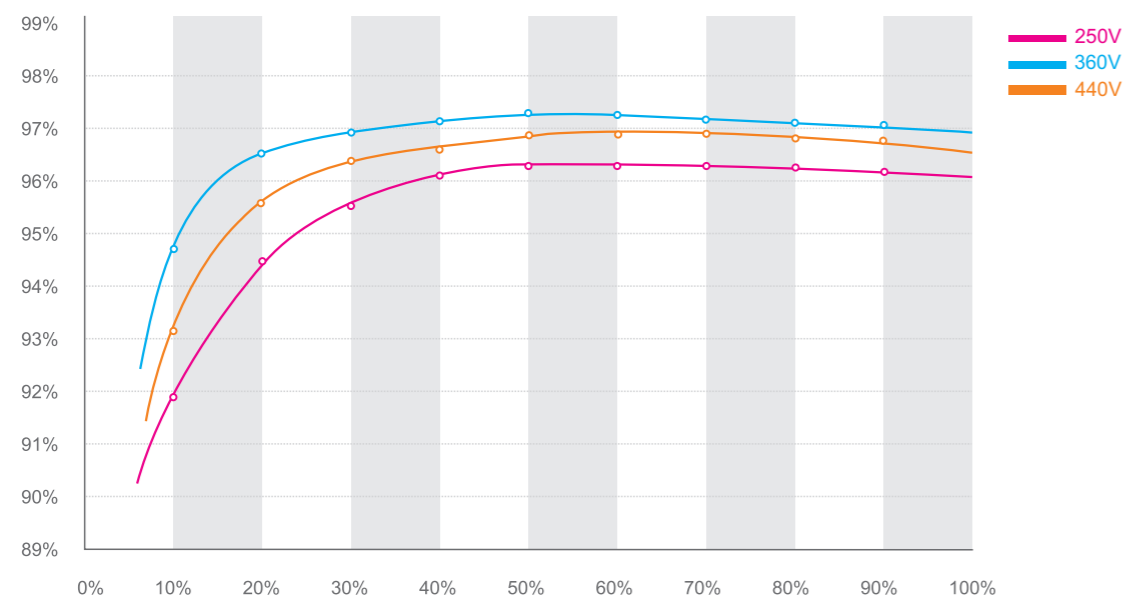
- ▶ Maximum efficiency of 97.5% and wide input voltage range
- ▶ Internal DC switch
- ▶ Transformerless GT topology
- ▶ Compact design
- ▶ Multi MPP controller
- ▶ MTL - String
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation

Europe / Australia ENS

- ▶ Simple national setting of line supply monitoring(ENS)
- ▶ Easy country configuration
- ▶ Multi - language display
- ▶ Currently available for Germany, Austria, France, UK, Austria, Switzerland, Italy and Spain etc.



3k efficiency



Datasheet

	Growatt 2500 MTL	Growatt 3000 MTL
Input Data		
Max. DC power	2700W	3200W
Max. DC voltage	500V	500V
Start voltage	150V	150V
PV voltage range	100V - 500V	100V - 500V
MPPT work voltage range / nominal voltage	120V-500V/360V	120V-500V/360V
Full load dc voltage range	190V - 500V	190V - 500V
Number of independent MPP inputs / strings per MPP input	2 / 1	2 / 1
Max. input current of tracker A/tracker B	10A / 10A	10A / 10A
Max. input current per string of tracker A/tracker B	10A / 10A	10A / 10A
Output (AC)		
Rated AC output power	2500W	3000W
Max. AC power	2500W	3000W
Max. output current	12.5A	15A
AC nominal voltage; range	220V/230V/240V; 180V - 280V	220V/230V/240V; 180V - 280V
AC grid frequency; range	50,60Hz;±5 Hz	50,60Hz;±5 Hz
Power factor	1	1
THDI	<3%	<3%
AC connection	Single phase	Single phase
Efficiency		
Max. efficiency	97.5%	97.5%
Euro-eta	97%	97.4%
MPPT efficiency	99.5%	99.5%
Protection Devices		
DC reverse polarity protection	yes	yes
DC switch rating for each MPPT	yes	yes
Output over current protection	yes	yes
Output overvoltage protection-varistor	yes	yes
Ground fault monitoring	yes	yes
Grid monitoring	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes
General Data		
Dimensions (W / H / D) in mm	360/421/152	360/421/152
Weight	15.6KG	15.6KG
Operating temperature range	-30 °C ... +60 °C	-30 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)	≤ 25 dB(A)
Self-Consumption night	< 0.5 W	< 0.5 W
Topology	Transformerless	Transformerless
Cooling concept	Natural	Natural
Environmental Protection Rating	IP 65	IP 65
Altitude	2000m without derating	2000m without derating
Relative Humidity	0~95%	0~95%
Features		
DC connection	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal
Display	LCD	LCD
Interfaces: RS232/RS485/Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt

Certificates and Approvals

CE, VDE 0126-1-1, VDE-AR-N4105, G83, IEC-62109, CEI 0-21, AS4777, AS/NZS 3100

Growatt 3600MTL / 4200MTL / 4600MTL / 5000MTL

Leading - edge Technology

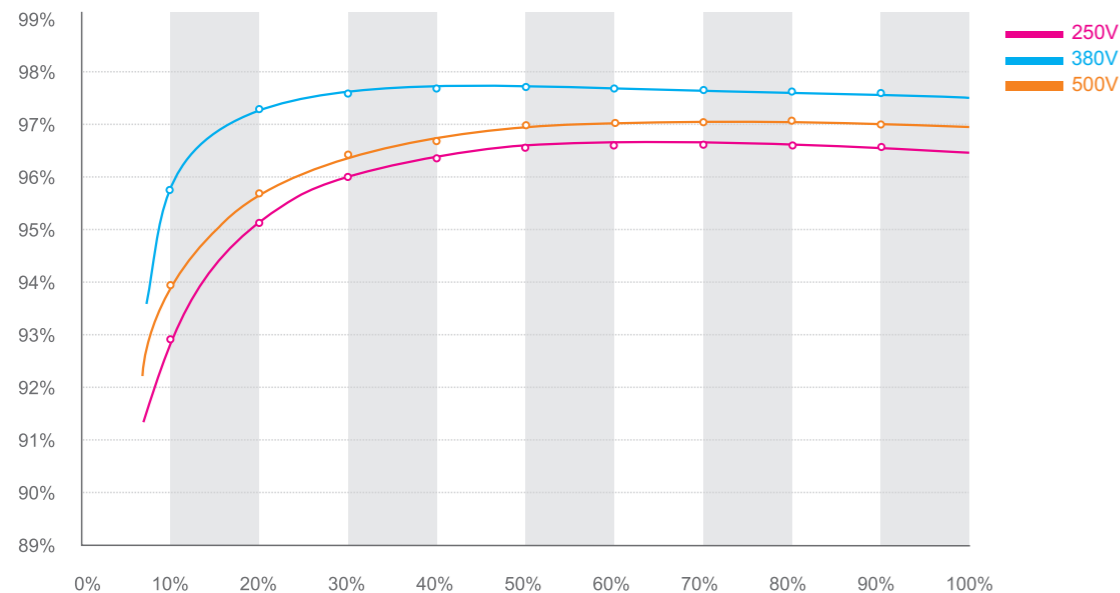
- ▶ Maximum efficiency of 97.9% and wide input voltage range
- ▶ Internal DC switch
- ▶ Transformerless GT topology
- ▶ Compact design
- ▶ Multi MPP controller
- ▶ MTL - String
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation

Europe / Australia ENS

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5k efficiency



Datasheet

	Growatt 3600MTL	Growatt 4200MTL	Growatt 4600MTL	Growatt 5000MTL
Input Data				
Max. DC power	3800W	4400W	4800W	5200W
Max. DC voltage	600V	600V	600V	600V
Start voltage	150V	150V	150V	150V
PV voltage range	100V-600V	100V-600V	100V-600V	100V-600V
MPPT work voltage range / nominal voltage	120V-600V/360V	120V-600V/360V	120V-600V/360V	120V-600V/360V
Full load dc voltage range	190V-580V	175V-580V	175V-580V	175V-580V
Number of MPP trackers /strings per MPP tracker	2 / 2	2 / 2	2 / 2	2 / 2
Max. input current of tracker A/tracker B	10A / 10A	15A / 15A	15A / 15A	15A / 15A
Max. input current per string of tracker A/tracker B	10A / 10A	15A / 15A	15A / 15A	15A / 15A
Output (AC)				
Rated AC output power	3600W	4200W	4600W	5000W
Max. AC power	3600W	4200W	4600W	5000W
Max. output current	18A	21A	23A	25A
AC nominal voltage; range	220V/230V/240V; 180Vac - 280Vac	220V/230V/240V; 180Vac - 280Vac	220V/230V/240V; 180Vac - 280Vac	220V/230V/240V; 180Vac - 280Vac
AC grid frequency; range	50Hz, 60Hz / ±5Hz	50Hz, 60Hz / ±5Hz	50Hz, 60Hz / ±5Hz	50Hz, 60Hz / ±5Hz
Power factor	1	1	1	1
THDI	<3%	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase	Single phase
Efficiency				
Max. efficiency	97.6%	97.9%	97.9%	97.9%
Euro-eta	97%	97.4%	97.4%	97.4%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	yes	yes	yes	yes
DC switch rating for each MPPT	yes	yes	yes	yes
Output over current protection	yes	yes	yes	yes
Output overvoltage protection-varistor	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes	yes
General Data				
Dimensions (W / H / D) in mm	360/510/188	360/510/188	360/510/188	360/510/188
Weight	24KG	24KG	24KG	24KG
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)
Self-Consumption night	< 0.5 W	< 0.5 W	< 0.5 W	< 0.5 W
Topology	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0~95%	0~95%	0~95%	0~95%
Features				
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD	LCD
Interfaces: RS232/RS485/Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt	yes / opt

Certificates and Approvals

CE, VDE 0126-1-1, CGC, DK5940, G59/2, G83/1-1, RD1663, RD1699, EN50438, IEC-62109, ENEL-Guide, AS4777, AS/NZS 3100

Growatt 3600MTL-10 / 4200MTL-10 / 5000MTL-10

Leading - edge Technology

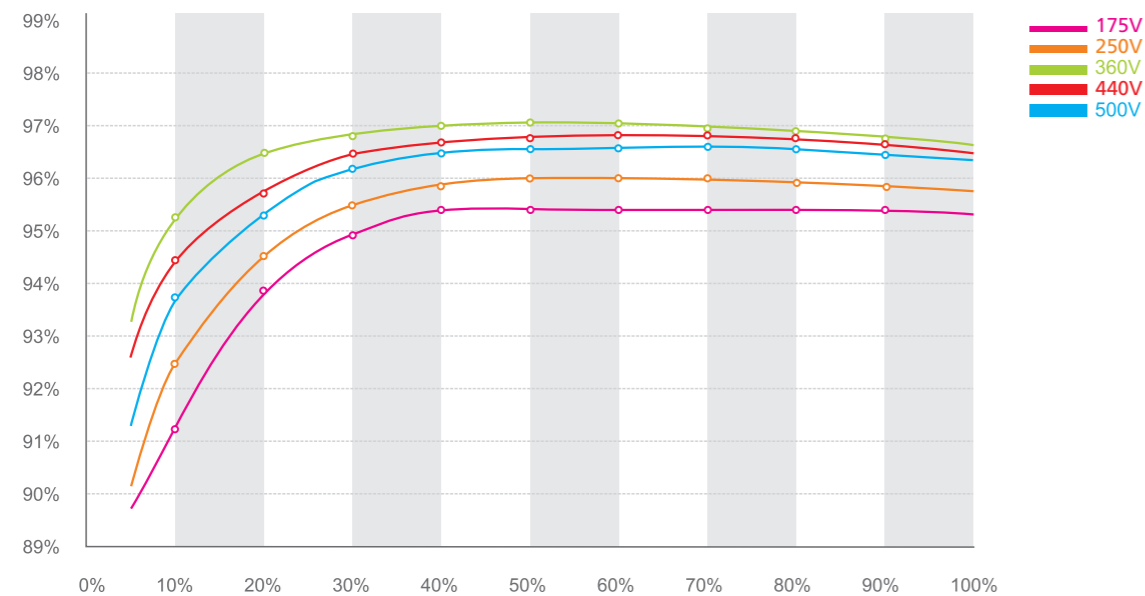
- ▶ maximum efficiency of 97.1% and wide input voltage range
- ▶ internal DC switch
- ▶ transformerless GT topology
- ▶ compact design
- ▶ Multi MPP controller
- ▶ MTL-string
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation
- ▶ Internal wireless communication module (option)
- ▶ Complete DSP control
- ▶ Reactive power control

Europe / Australia ENS

- ▶ Simple national setting of line supply monitoring(ENS)
- ▶ Easy country configuration
- ▶ Multi - language display
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5k efficiency



Datasheet

	Growatt 3600MTL-10	Growatt 4200MTL-10	Growatt 5000MTL-10
Input Data			
Max. DC power	3800W	4400W	5000W
Max. DC voltage	600V	600V	600V
Start voltage	150V	150V	150V
DC nominal voltage	360V	360V	360V
PV voltage range	100V-600V	100V-600V	100V-600V
MPPT work voltage range/ nominal voltage	175V-550V /360V	175V-550V /360V	175V-550V /360V
Number of MPP trackers/ strings per MPP tracker	2/2	2/2	2/2
Max. input current of tracker A/tracker B	10A / 10A	15A / 15A	15A / 15A
Max. input current per string of tracker A/tracker B	10A / 10A	15A / 15A	15A / 15A
Output (AC)			
Rated AC output power	3600W	4200W	4600W
Max. AC power	3600VA	4200VA	4600VA
Max. output current	18A	21A	23A
AC nominal voltage; range	220V/230V/240V; 180V - 280V	220V/230V/240V; 180V - 280V	220V/230V/240V; 180V - 280V
AC grid frequency; range	50Hz, 60Hz / ±5Hz	50Hz, 60Hz / ±5Hz	50Hz, 60Hz / ±5Hz
Power factor	1	1	1
Displacement power factor, configurable	0.9leading...0.9lagging	0.9leading...0.9lagging	0.9leading...0.9lagging
THDI	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase
Efficiency			
Max. efficiency	97.1%	97.1%	97.1%
Euro-eta	96.5%	96.5%	96.5%
MPPT efficiency	99.5%	99.5%	99.5%
Protection Devices			
DC reverse polarity protection	yes	yes	yes
DC switch rating for each MPPT	yes	yes	yes
Output over current protection	yes	yes	yes
Output overvoltage protection-varistor	yes	yes	yes
Ground fault monitoring	yes	yes	yes
Grid monitoring	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes
General Data			
Dimensions (W / H / D) in mm	360/510/188	360/510/188	360/510/188
Weight	24KG	24KG	24KG
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)
Consumption: operating (standby)/ night	< 5W / < 0.5 W	< 5W / < 0.5 W	< 5W / < 0.5 W
Topology	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0~95%	0~95%	0~95%
Features			
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD
Interfaces: RS232/RS485/ Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt
Certificates and Approvals			
CE, IEC 62109, VDE 0126-1-1, VDE-AR-N 4105, CEI 0-21, RD1663, G59, G83, AS4777, AS/NZS 3100.			
* 0.95leading...0.95lagging with VDE-AR-N 4105/0.95leading...0.95lagging with CEI 0-21 (System power less than 6KW) /0.9leading...0.9lagging with CEI 0-21 (System power larger than 6KW)			

Growatt 6000MTL-10

Leading - edge Technology

- ▶ maximum efficiency of 97.9% and wide input voltage range
- ▶ internal DC switch
- ▶ transformerless GT topology
- ▶ compact design
- ▶ Multi MPP controller
- ▶ MTL-string
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation
- ▶ Internal wireless communication module (option)
- ▶ Complete DSP control
- ▶ Reactive power control

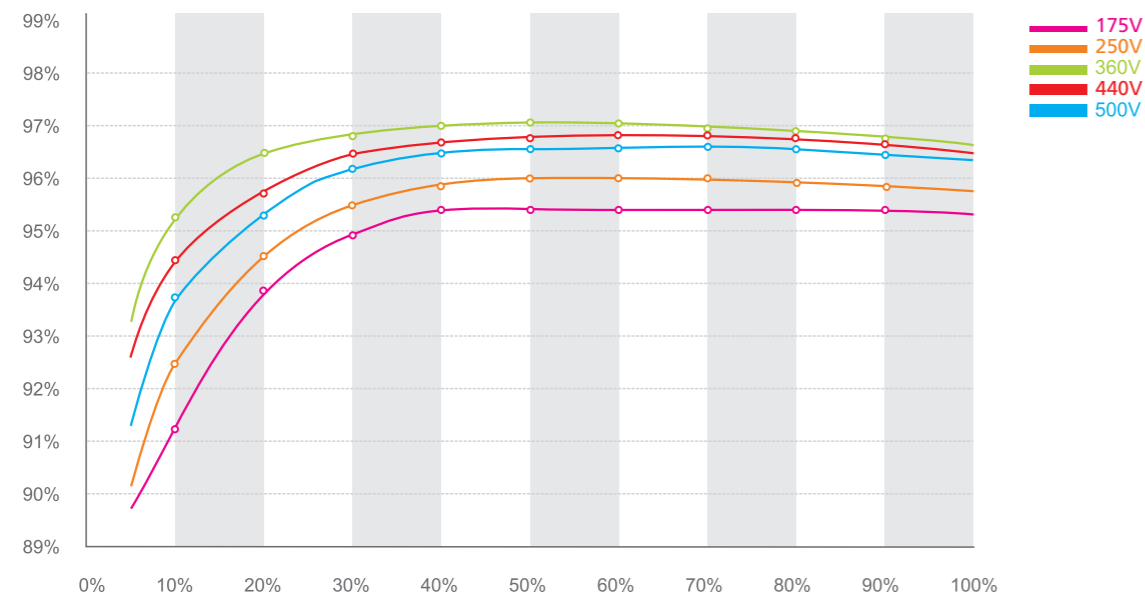
Europe / Australia ENS

- ▶ Simple national setting of line supply monitoring(ENS)
- ▶ Easy country configuration
- ▶ Multi - language display
- ▶ Currently available for Germany, Austria, France, UK, Austria, Switzerland, Italy and Spain etc.



*

5k efficiency



Datasheet

Growatt 6000MTL-10

Input Data

Max. DC power	6400W
Max. DC voltage	600V
Start voltage	150V
PV voltage range	100V-600V
MPPT work voltage range/ nominal voltage	120V - 550V /360V
Full load dc voltage range	175V - 550V
Number of independent MPP trackers /strings per MPP tracker	2/2
Max. input current/ per string	18A/18A

Output (AC)

Rated AC output power	6000W
Max. AC power	6000VA
Max. output current	30A
AC nominal voltage; range	220V/230V/240V; 180V - 280V
AC grid frequency; range	50Hz, 60Hz / ±5Hz
Power factor	0.9
THDI	<3%
AC connection	Single phase

Efficiency

Max. efficiency	97.9%
Euro-eta	97.4%
MPPT efficiency	99.5%

Protection Devices

DC reverse polarity protection	yes
DC switch rating for each MPPT	yes
Output over current protection	yes
Output overvoltage protection-varistor	yes
Ground fault monitoring	yes
Grid monitoring	yes
Integrated all-pole sensitive leakage current monitoring unit	yes

General Data

Dimensions (W / H / D) in mm	400/510/188
Weight	26KG
Operating temperature range	-25 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)
Self-Consumption night	< 0.5 W
Topology	Transformerless
Cooling concept	Natural
Environmental Protection Rating	IP 65
Altitude	2000m without derating
Relative Humidity	0~95%

Features

DC connection	H4/MC4(opt)
AC connection	Screw terminal
Display	LCD
Interfaces: RS232/RS485/ Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt

Certificates and Approvals

VDE 0126-1-1, IEC 62109,CE,ENEL Guideline, CEI 0-21

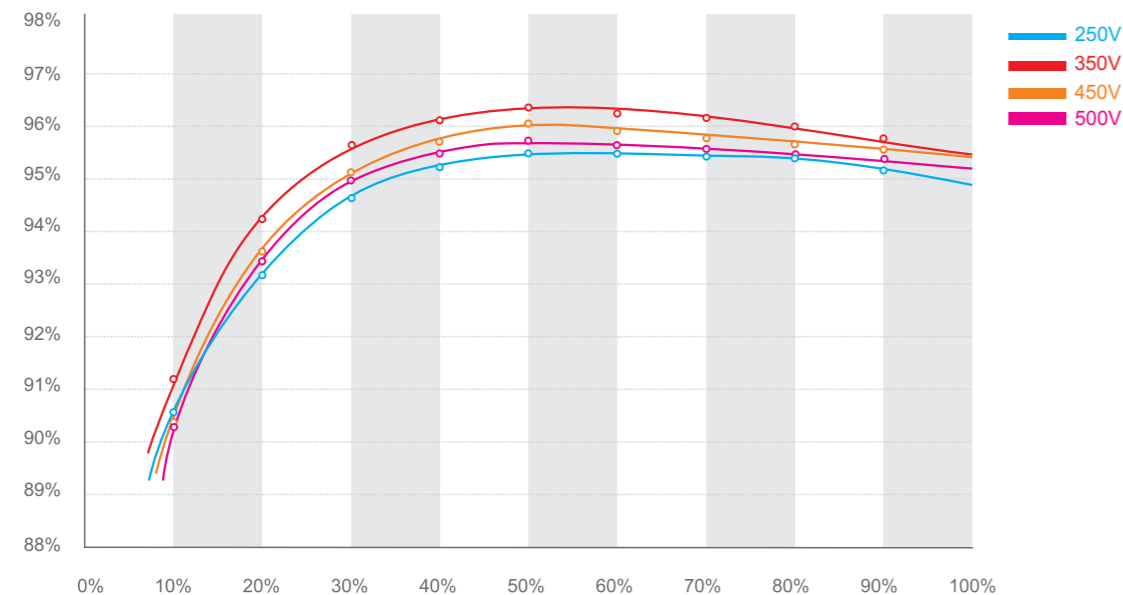
Growatt 2000HF / 2500HF / 3000HF

Leading - edge Technology

- ▶ Maximum efficiency of 96.5% and wide input voltage range
- ▶ DC switch optional
- ▶ High frequency
- ▶ Compact design
- ▶ MTL - String
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Fanless cooling concept
- ▶ Easy installation
- ▶ High reliability



3k efficiency



Datasheet

	Growatt 2000HF	Growatt 2500HF	Growatt 3000HF
Input Data			
Max. DC power	2200W	2700W	3200W
Max. DC voltage	600V	600V	600V
Start voltage	150V	150V	150V
PV voltage range	100V - 600V	100V - 600V	100V - 600V
MPPT work voltage range / nominal voltage	120V - 600V/380V	120V - 600V/380V	120V - 600V/380V
Full load dc voltage range	195V - 480V	195V - 480V	250V - 480V
Number of independent MPP trackers / strings per MPP tracker	1 / 2	1 / 2	1 / 2
Max. input current / per string	12A / 12A	15A / 15A	15A / 15A
Output (AC)			
Rated AC output power	2000W	2500W	3000W
Max. AC power	2000W	2500W	3000W
Max. output current	10A	12A	14.3A
AC nominal voltage; range	220V/230V/240V; 180Vac-280Vac	220V/230V/240V; 180Vac-280Vac	220V/230V/240V; 180Vac-280Vac
AC grid frequency; range	50Hz,60Hz;±5Hz	50Hz,60Hz;±5Hz	50Hz,60Hz;±5Hz
Power factor	>0.99	>0.99	>0.99
THDI	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase
Efficiency			
Max. efficiency	96.5%	96.4%	96.3%
Euro - eta	95.5%	95.5%	95.5%
MPPT efficiency	99.5%	99.5%	99.5%
Protection Devices			
DC reverse polarity protection	yes	yes	yes
DC switch rating for each MPPT	yes	yes	yes
Output over current protection	yes	yes	yes
Output overvoltage protection-varistor	yes	yes	yes
Ground fault monitoring	yes	yes	yes
Grid monitoring	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes
General Data			
Dimensions (W / H / D) in mm	440/455/135	440/455/135	440/455/135
Weight	18KG	18KG	18.5KG
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)
Self-Consumption night	< 0.5 W	< 0.5 W	< 0.5 W
Topology	HF Transformer	HF Transformer	HF Transformer
Cooling concept	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0~95%	0~95%	0~95%
Features			
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD
Interfaces: RS232/RS485/Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt

Certificates and Approvals

CE, VDE 0126-1-1, VDE-AR-N4105, G83, RD1663, DK5940, IEC-62109, AS4777, AS/NZS 3100

Growatt 4000 TL3 / 5000 TL3 / 6000 TL3

Leading - edge Technology

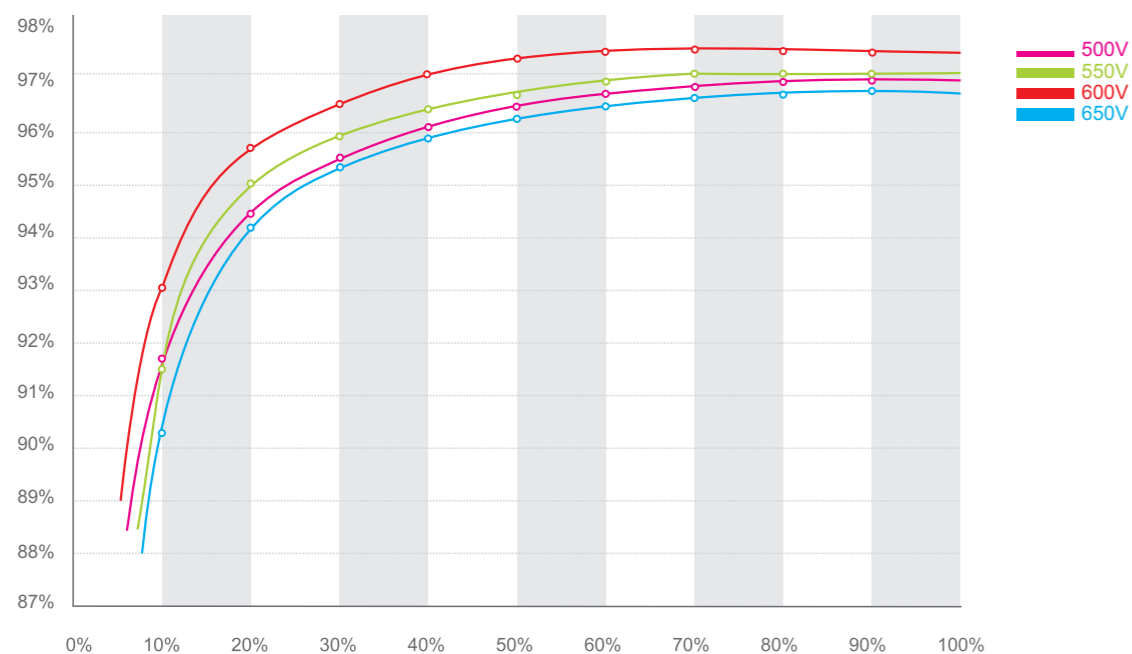
- ▶ DC input voltage up to 1000V
- ▶ Maximum efficiency of 97.9%
- ▶ Internal DC switch
- ▶ Transformerless
- ▶ Compact design
- ▶ Multi MPP controller
- ▶ MTL - String
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation
- ▶ Comprehensive Growatt warranty program



Europe / Australia ENS

- ▶ Simple national setting of line supply monitoring(ENS)
- ▶ Easy country configuration
- ▶ Multi - language display
- ▶ Currently available for Germany, Austria, France, UK, Switzerland, Italy and Spain etc.

6k efficiency



Datasheet

	Growatt 4000 TL3	Growatt 5000 TL3	Growatt 6000 TL3
Input Data			
Max. DC power	4200W	5200W	6300W
Max DC voltage	800V	800V	800V
Start Voltage	150V	150V	150V
PV voltage range	140V - 800V	140V - 800V	140V - 800V
MPP voltage range / DC nominal voltage	200V - 800V / 580V	200V - 800V / 580V	200V - 800V / 580V
Full load voltage range	250V - 750V	250V - 750V	250V - 750V
Number of independent MPP trackers/strings per MPP tracker	2/1	2/1	2/1
Max. input current	9A / 9A	9A / 9A	10A / 10A
Max. input current per string	16A	16A	16A
Output (AC)			
Rated AC output power	4000W	5000W	6000W
Max. AC power	4000VA	5000VA	6000VA
Max. output current	6.4A	7.9A	9.3A
Max. short-circuit current	20A	20A	20A
AC voltage range; range	3/N/PE, 230V/400V 185 - 260V	3/N/PE, 230V/400V 185 - 260V	3/N/PE, 230V/400V 185 - 260V
AC grid frequency; range	50/60Hz; 44-55Hz/54-65Hz	50/60Hz; 44-55Hz/54-65Hz	50/60Hz; 44-55Hz/54-65Hz
Power factor at rated power	1	1	1
Adjustable displacement power factor	0.8 leading -0.8laging	0.8 leading -0.8laging	0.8 leading -0.8laging
THDI	<3%	<3%	<3%
AC connection	Three phase	Three phase	Three phase
Efficiency			
Max. efficiency	97.9%	97.9%	97.9%
Euro - eta	96.5%	96.6%	96.8%
MPPT efficiency	99.5%	99.5%	99.5%
Protection Devices			
DC reverse polarity protection	yes	yes	yes
DC switch for each MPPT	yes	yes	yes
Output AC overcurrent protection	yes	yes	yes
Output AC overvoltage Protection - Varistor	yes	yes	yes
Ground fault monitoring	yes	yes	yes
Grid monitoring	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes
General Data			
Dimensions (W / H / D) in mm	560/433/200	560/433/200	560/433/200
Weight	30KG	35KG	35KG
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)
Self-consumption night	< 0.5W	< 0.5W	< 0.5W
Topology	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0-95%	0-95%	0-95%
Features			
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD
Interfaces: RS232/R485/Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt
Certificates and Approvals			

Growatt 10000UE / 12000UE / 18000UE / 20000UE

Leading - edge Technology

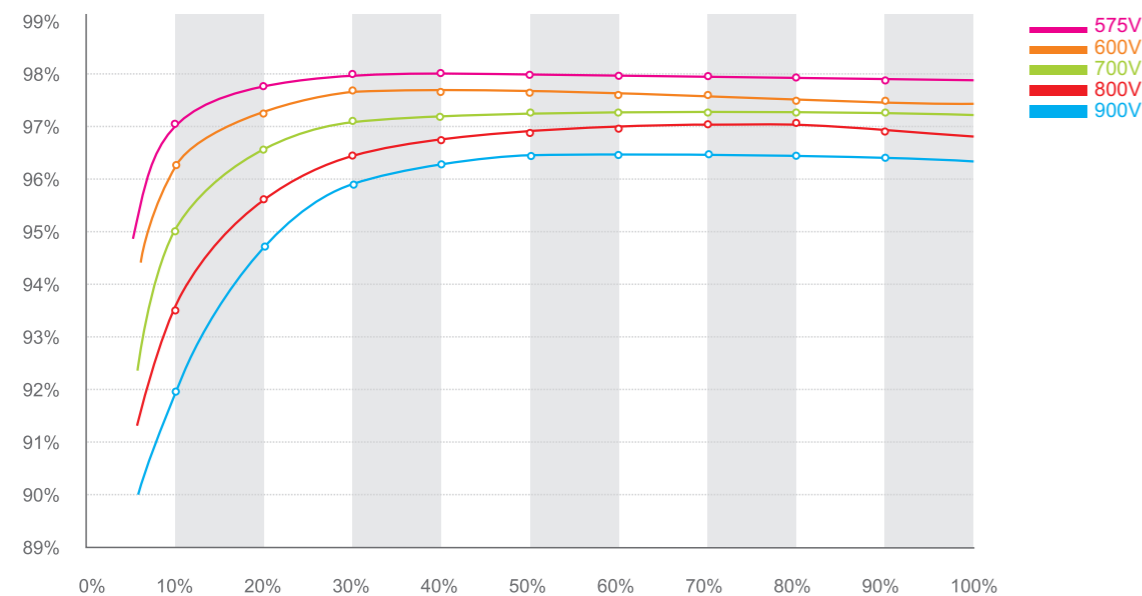
- ▶ DC input voltage up to 1000V
- ▶ Maximum efficiency of 98%
- ▶ Internal DC switch
- ▶ Transformerless
- ▶ Compact design
- ▶ Multi MPP controller
- ▶ MTL - String
- ▶ Bluetooth / RF technology / Wi-Fi
- ▶ Sound control
- ▶ Easy installation
- ▶ Comprehensive Growatt warranty program

Europe / Australia ENS

- ▶ Simple national setting of line supply monitoring(ENS)
- ▶ Easy country configuration
- ▶ Multi - language display
- ▶ Currently available for Germany, Austria, France, UK, Switzerland, Italy and Spain etc.



10k efficiency



Datasheet

	Growatt 10000UE	Growatt 12000UE	Growatt 18000UE	Growatt 20000UE
Input Data				
Max. DC power	10500W	12500W	18700W	20800W
Max DC voltage	1000V	1000V	1000V	1000V
Start Voltage	350V	350V	350V	350V
PV voltage range	180V - 1000V	180V - 1000V	180V - 1000V	180V - 1000V
MPP voltage range / DC nominal voltage	300V - 1000V / 600V	300V - 1000V / 600V	300V - 1000V / 600V	300V - 1000V / 600V
Full load voltage range	400V - 800V	400V - 800V	400V - 800V	400V - 800V
Number of independent MPP trackers/strings per MPP tracker	2/2	2/2	2/3	2/3
Max. input current	15A / 15A	17A / 17A	23A / 23A	26A / 26A
Max. input current per string	20A	20A	20A	20A
Output (AC)				
Rated AC output power	10KW	12KW	18KW	20KW
Max. AC power	10KVA	12KVA	18KVA	20KVA
Max. output current	16A	19A	28.6A	32A
AC voltage range; range	3/N/PE, 230V/400V 184 - 275V	3/N/PE, 230V/400V 184 - 275V	3/N/PE, 230V/400V 184 - 275V	3/N/PE, 230V/400V 184 - 275V
AC grid frequency ; range	50/60Hz; 44-55Hz/54-65Hz	50/60Hz; 44-55Hz/54-65Hz	50/60Hz; 44-55Hz/54-65Hz	50/60Hz; 44-55Hz/54-65Hz
Adjustable displacement power factor	0.8 leading -0.8laging	0.8 leading -0.8laging	0.8 leading -0.8laging	0.8 leading -0.8laging
THDI	<3%	<3%	<3%	<3%
AC connection	Three phase	Three phase	Three phase	Three phase
Efficiency				
Max. efficiency	98%	98%	98%	98%
Euro - eta	97.5%	97.5%	97.5%	97.5%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	yes	yes	yes	yes
DC switch for each MPPT	yes	yes	yes	yes
Output AC overcurrent protection	yes	yes	yes	yes
Output AC overvoltage Protection - Varistor	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes	yes
General Data				
Dimensions (W / H / D) in mm	740/440/235	740/440/235	740/520/235	740/520/235
Weight	41KG	41KG	60KG	60KG
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤ 55 dB(A)	≤ 55 dB(A)	≤ 55 dB(A)	≤ 55 dB(A)
Self-consumption night	< 0.5W	< 0.5W	< 0.5W	< 0.5W
Topology	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Smart cooling	Smart cooling	Smart cooling	Smart cooling
Environmental Protection Rating	IP 65	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0~95%	0~95%	0~95%	0~95%
Features				
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD	LCD
Interfaces: RS232/R485/Bluetooth/RF/Wi-Fi	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty:5 years / 10 years	yes / opt	yes / opt	yes / opt	yes / opt
Certificates and Approvals				

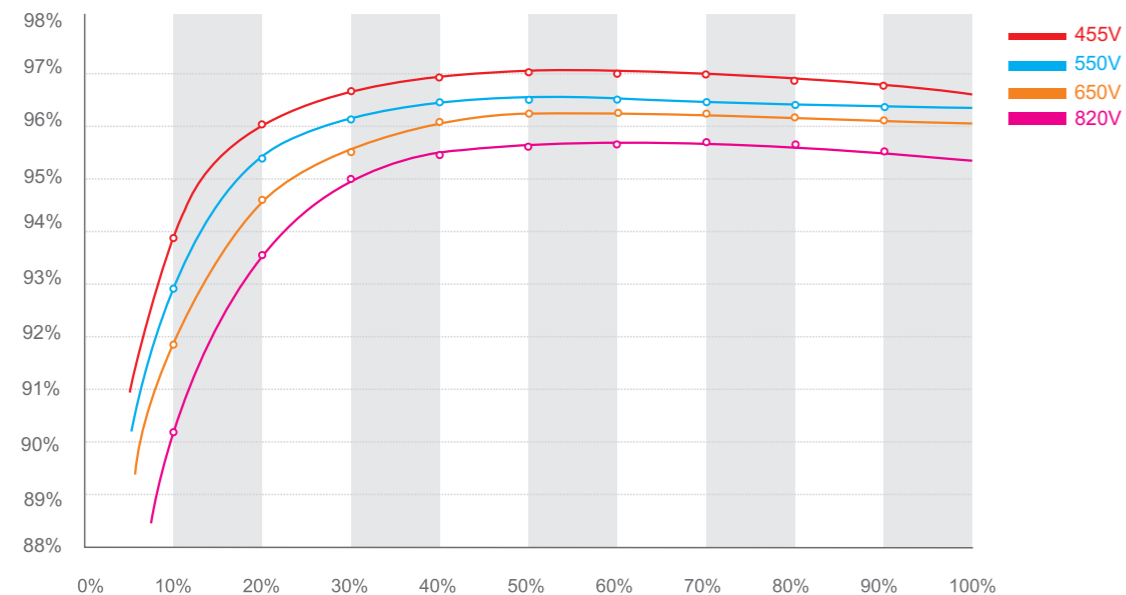
Growatt CP100

Leading - edge Technology

- ▶ High conversion efficiency of 98.6% deliver more energy
- ▶ Powerful grid management functions(including LVRT)
- ▶ Active power continuous adjustment (0-100%)
- ▶ Reactive power adjustable ,PF range 0.9lagging-0.9leading
- ▶ Friendly touch monitoring interface, easy installation maintenance procedure
- ▶ Design for max.ROI: Newest generation IGBTs and advanced MPPT Algorithms
- ▶ Auxiliary electrical heating (optional)
- ▶ Comprehensive protection for overvoltage, islanding, short-circuit, overload, overheat etc.
- ▶ Certificate and approvals including CE, CGC, VDE0126, TUV etc.



100k efficiency



Datasheet

Growatt CP 100

Input Data

Max. DC power	115KW
Max. DC voltage	1000V
DC Voltage Range	450V - 1000V
MPPT Voltage Range	450V - 820V
Rated Input Voltage	600V
Start Voltage/Power	500V/1000W
Maximum Input Current	250A
Number of Independent MPPT	1
Number of DC Inputs	2

Output (AC)

Rated AC Power	100KVA
Rated AC Voltage	400V
AC Voltage Range	310V - 450V
Rated Frequency	50Hz/60Hz
Frequency Range	45Hz-55Hz/55Hz-65Hz
Maximum Output Current	160A
Power Factor (cosφ)	0.9lagging – 0.9leading
Total Harmonic Distortion	<3%(@Pac,r)

Efficiency

Maximum Efficiency	97.1%
Euro Efficiency	96.5%
MPPT Efficiency	99.9%

Protection

DC Disconnection Device	DC circuit breaker
AC Disconnection Device	AC circuit breaker
DC Overvoltage Protection	Surge arrester type II
AC Overvoltage Protection	Surge arrester type II
Grid monitoring/Management	yes/yes
Ground monitoring	yes
Over Temperature Protection	yes
Insulation monitoring	yes

General Data

Dimension (W/H/D)	1100/1890/850 mm
Weight	1000kg
Operating Temperature Range	-25 °C ... +55 °C
Relative Humidity	0 - 95%
Degree of Protection	IP 20
Noise Emission	65dB(A)@1m
Maximum Operating Altitude	6000m(Derating over 3000m)
Standby consumption	<100W
Cooling	Air Forced
Topology	Low Frequency Transformer
Display	Touch screen LCD
Communication Interface	RS 485/ Ethernet

Certificates and Approvals

CE/TUV, CQC, CGC, LVRT

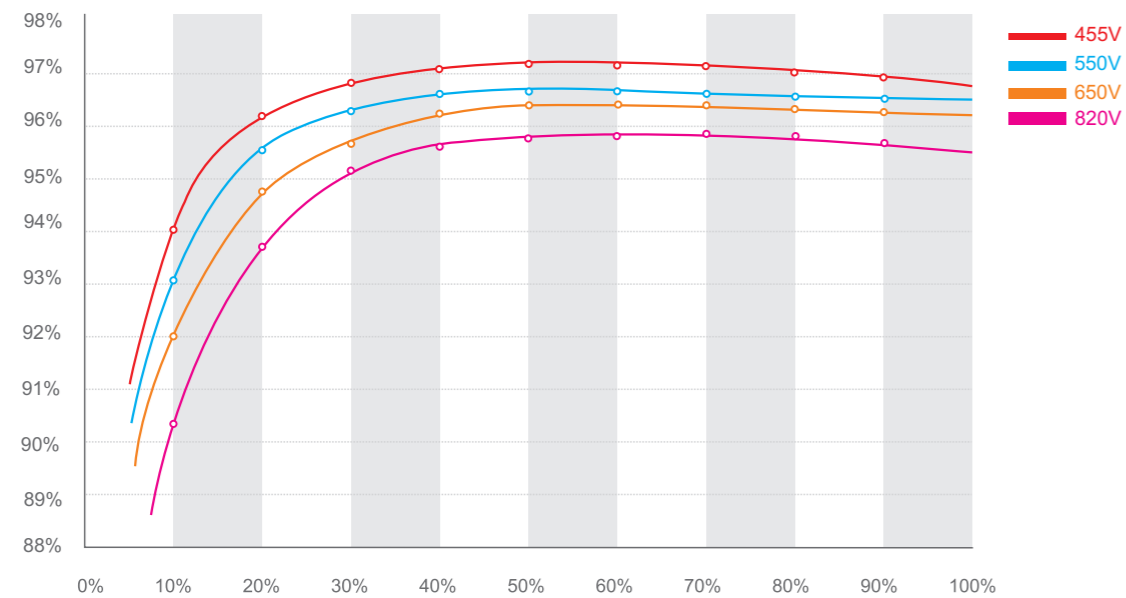
Growatt CP250

Leading - edge Technology

- ▶ High conversion efficiency of 98.6% deliver more energy
- ▶ Powerful grid management functions(including LVRT)
- ▶ Active power continuous adjustment (0-100%)
- ▶ Reactive power adjustable ,PF range 0.9lagging-0.9leading
- ▶ Friendly touch monitoring interface, easy installation maintenance procedure
- ▶ Design for max.ROI: Newest generation IGBTs and advanced MPPT Algorithms
- ▶ Auxiliary electrical heating (optional)
- ▶ Comprehensive protection for overvoltage, islanding, short-circuit, overload, overheat etc.
- ▶ Certificate and approvals including CE, CGC, VDE0126, TUV etc.



250k efficiency



Datasheet

Growatt CP250

Input Data

Max. DC power	285KW
Max. DC voltage	1000V
DC Voltage Range	450V - 1000V
MPPT Voltage Range	450V - 820V
Rated Input Voltage	600V
Start Voltage/Power	500V/2500W
Maximum Input Current	635A
Number of Independent MPPT	1
Number of DC Inputs	6

Output (AC)

Rated AC Power	250KVA
Rated AC Voltage	400V
AC Voltage Range	310V - 450V
Rated Frequency	50Hz/60Hz
Frequency Range	45Hz-55Hz/55Hz-65Hz
Maximum Output Current	400A
Power Factor (cosφ)	0.9lagging – 0.9leading
Total Harmonic Distortion	<3%(@Pac,r)

Efficiency

Maximum Efficiency	97.3%
Euro Efficiency	96.7%
MPPT Efficiency	99.9%

Protection

DC Disconnection Device	DC circuit breaker
AC Disconnection Device	AC circuit breaker
DC Overvoltage Protection	Surge arrester type II
AC Overvoltage Protection	Surge arrester type II
Grid monitoring/Management	yes/yes
Ground monitoring	yes
Over Temperature Protection	yes
Insulation monitoring	yes

General Data

Dimension (W/H/D)	1600/2100/850 mm
Weight	1600kg
Operating Temperature Range	-25 °C ... +55 °C
Relative Humidity	0 - 95%
Degree of Protection	IP 20
Noise Emission	65dB(A)@1m
Maximum Operating Altitude	6000m(Derating over 3000m)
Standby consumption	<100W
Cooling	Air Forced
Topology	Low Frequency Transformer
Display	Touch screen LCD
Communication Interface	RS 485/ Ethernet

Certificates and Approvals

CE/TUV, CQC, CGC, LVRT

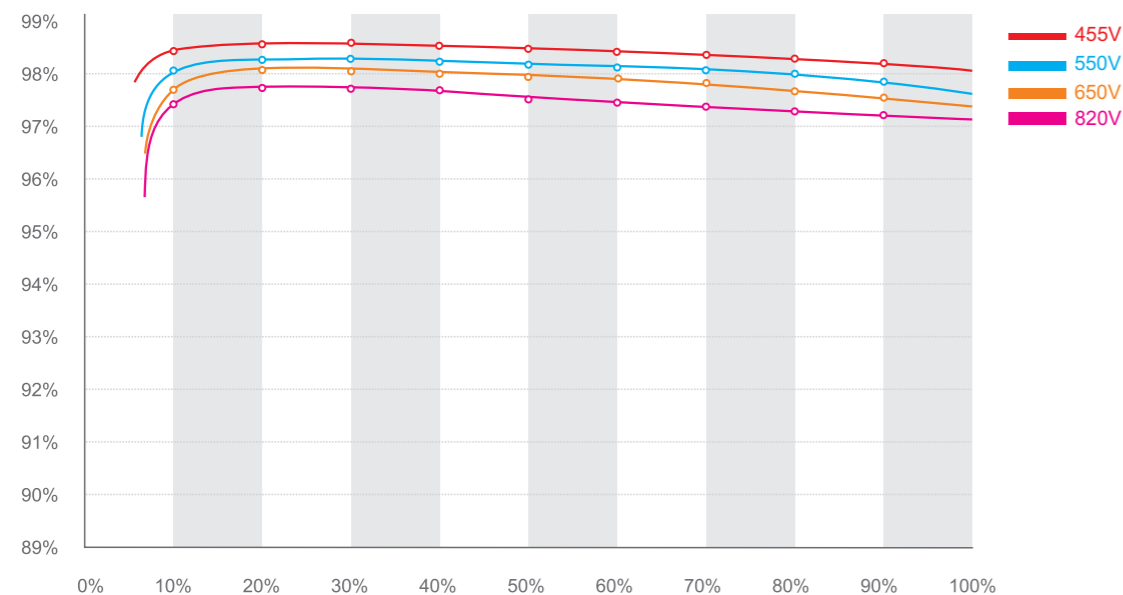
Growatt CP500TL / CP630TL

Leading - edge Technology

- ▶ High conversion efficiency of 98.6% deliver more energy
- ▶ Powerful grid management functions(including LVRT)
- ▶ Active power continuous adjustment (0-100%)
- ▶ Reactive power adjustable ,PF range 0.9lagging-0.9leading
- ▶ Transformer-less inverter for direct connection to MV transformer
- ▶ Friendly touch monitoring interface, easy installation maintenance procedure
- ▶ Design for max.ROI: Newest generation IGBTs and advanced MPPT Algorithms
- ▶ Auxiliary electrical heating (optional)
- ▶ Comprehensive protection for overvoltage, islanding, short-circuit, overload, overheat etc.
- ▶ Certificate and approvals including CE, CGC, VDE0126, TUV etc.



500k efficiency



Datasheet

	Growatt CP500TL	Growatt CP630TL
Input Data		
Max. DC power	575KW	725KW
Max. DC voltage	1000V	1000V
DC Voltage Range	450V - 1000V	450V - 1000V
MPPT Voltage Range	450V - 820V	500V - 820V
Rated Input Voltage	600V	600V
Start Voltage/Power	500V/5000W	500V/6300W
Maximum Input Current	1270A	1450A
Number of Independent MPPT	1	1
Number of DC Inputs	2x6	2x6
Output (AC)		
Rated AC Power	500KVA	630KVA
Rated AC Voltage	270V	315V
AC Voltage Range	210V - 310V	250V - 362V
Rated Frequency	50Hz/60Hz	50Hz/60Hz
Frequency Range	45Hz-55Hz/55Hz-65Hz	45Hz-55Hz/55Hz-65Hz
Maximum Output Current	1200A	1296A
Power Factor (cosφ)	0.9lagging – 0.9leading	0.9lagging – 0.9leading
Total Harmonic Distortion	<3%(@Pac,r)	<3%(@Pac,r)
Efficiency		
Maximum Efficiency	98.6%	98.7%
Euro Efficiency	98.3%	98.5%
MPPT Efficiency	99.9%	99.9%
Protection		
DC Disconnection Device	DC circuit breaker	DC circuit breaker
AC Disconnection Device	AC circuit breaker	AC circuit breaker
DC Overvoltage Protection	Surge arrester type II	Surge arrester type II
AC Overvoltage Protection	Surge arrester type II	Surge arrester type II
Grid monitoring/Management	yes/yes	yes/yes
Ground monitoring	yes	yes
Over Temperature Protection	yes	yes
Insulation monitoring	yes	yes
General Data		
Dimension (W/H/D)	2000/2200/850 mm	2000/2200/850 mm
Weight	1600kg	1600kg
Operating Temperature Range	-25 °C ... +55 °C	-25 °C ... +55 °C
Relative Humidity	0 - 95%	0 - 95%
Degree of Protection	IP 20	IP 20
Noise Emission	65dB(A)@1m	65dB(A)@1m
Maximum Operating Altitude	6000m(Derating over 3000m)	6000m(Derating over 3000m)
Standby consumption	<100W	<100W
Cooling	Air Forced	Air Forced
Topology	Low Frequency Transformer	Low Frequency Transformer
Display	Touch screen LCD	Touch screen LCD
Communication Interface	RS 485/ Ethernet	RS 485/ Ethernet

Certificates and Approvals

CE/TUV, CQC, CGC, LVRT

Growatt CP1000TL

Leading - edge Technology

- ▶ High conversion efficiency of 98.6% deliver more energy
- ▶ Powerful grid management functions (including LVRT)
- ▶ Active power continuous adjustment (0-100%)
- ▶ Reactive power continuous adjustment (0-100%)
- ▶ Integrated with SCADA monitoring system, totally compatible with smart-grid interface
- ▶ Intelligent control, entirely meet the requirements of grid
- ▶ Provide a turnkey solution, easy installation and maintenance
- ▶ Comprehensive protection for overvoltage, islanding, short-circuit, overload, etc



Growatt CP1000TL

Input Data

Max. DC power	1150KW
Max. DC voltage	1000V
DC Voltage Range	450V - 1000V
MPPT Voltage Range	450V - 820V
Rated Input Voltage	600V
Start Voltage/Power	500V/1000W
Maximum Input Current	2540A
Number of Independent MPPT	1
Number of DC Inputs	2x8

Output (AC)

Rated AC Power	1000KVA
Rated AC Voltage	270V
AC Voltage Range	210V - 310V
Rated Frequency	50Hz/60Hz
Frequency Range	45Hz-55Hz/55Hz-65Hz
Maximum Output Current	2400A
Power Factor (cosφ)	0.9lagging – 0.9leading
Total Harmonic Distortion	<3%(@Pac,r)

Efficiency

Maximum Efficiency	98.6%
Euro Efficiency	98.3%
MPPT Efficiency	99.9%

Protection

DC Disconnection Device	DC circuit breaker
AC Disconnection Device	AC circuit breaker
DC Overvoltage Protection	Surge arrester type II
AC Overvoltage Protection	Surge arrester type II
Grid monitoring/Management	yes/yes
Ground monitoring	yes
Over Temperature Protection	yes
Insulation monitoring	yes

General Data

Dimension (W/H/D)	6058/2896/2348 mm
Weight	6000kg
Operating Temperature Range	-25 °C ... +50 °C
Relative Humidity	0 - 95%
Degree of Protection	IP 54
Noise Emission	65dB(A)@1m
Maximum Operating Altitude	6000m(Derating over 3000m)
Standby consumption	<200W
Cooling	Air Forced
Topology	Low Frequency Transformer
Display	Touch screen LCD
Communication Interface	RS 485/ Ethernet

Certificates and Approvals

CE/TUV, CQC, CGC, LVRT

The all-in-one wireless monitoring package for home

Informative, cute, and easy to operate, the ShineVision with Radio Frequency not only has sexy design, but also provides an innovative monitoring solution. Key data is visible on its display, including daily, monthly, total power yield and income, DC and AC voltage, energy yield in Euros, US dollars and Pounds, temperature, time, as well as insolation levels, which can be accessed just like a mobile phone. It can update and store the latest data permanently. ShineVision also can be set up to emit an audio signal to tell operators of system errors automatically.

Features

- ▶ RF communication for wireless operation.
- ▶ Automatic monitoring of up to six inverters simultaneously, applicable for small home system.
- ▶ Simple installation. It can be placed anywhere indoor with signal coverage.
- ▶ Easy-to-understand data display by simple key operation: real-time power, three-phase AC voltage, PV voltage, daily, monthly and total power yield and income, temperature, light intensity, the date and time.
- ▶ Data archiving automatically and permanently with high security.
- ▶ Audio alarm in the event of errors.
- ▶ Low power consumption, powered by adaptor or battery.



Datasheet

Communication

Inverter communication	Wireless radio frequency
Number of inverters	Max.6 units

Communication range

Partition communication	Max.30m
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Power supply

Power adapter	Input : 100-240V, 50/60Hz AC Output: 5V/0.1A AC
Type of battery	Number 5 AA alkaline battery

Environmental conditions for operation

Emitter temperature	-10°C ~ 60°C
Monitor temperature	-10 °C ~ 50°C
Humidity range	≤80%
Protection rating	IP20

General Data

Dimensions (W / H / D)	217/150/72mm
Weight	0.82kg
Installation site	Indoor
Deployment options	Desktop device
Language versions	English

Features

Display	LCD display
Operation	key-press
Warranty	13 months

Information displayed

General Information	Time, date, temperature
System Data	AC voltage, PV voltage, daily yield, monthly yield, total yield, etc.

Shine Pano

It is the latest intelligent monitoring master, specially designed for solar power plant. Using stable Linux operating system with high-speed CPU, smartly present solar system status through friendly user interface on 8-inch large color touch screen.

Features:

- ▶ A multi-functional and high-performance communication data logger;
- ▶ Keep user informed of the system's status at any time,
- ▶ Massive storage with flexible parameters setting, system information management, error prompt and record .
- ▶ Collects data and uploads information over the internet in near real-time to Growatt Shine Server platform.



Datasheet

Communication

Communication with inverters	RS 485 (wire connection) ZigBee (wireless connection)
Communication with PC	10/100 Mbit Ethernet
Communication range	RS 485: 1200m ZigBee: 300m (without obstacle) Ethernet: 100m

Electrical Data

Power adapter	Input: 100~240V,50/60Hz AC Output: 5V,2A DC
power consumption	Screen on:4.5W Screen off:2.5W

Environmental Conditions

Ambient temperature	0 - 45°C
Relative air humidity	5%-95%

General Data

Dimensions(W/H/D)	240/160/25mm
Net weight	0.82kg
Mounting location	Indoor
Mounting type	Wall mounting , tabletop device
Language	English
Screen	800X600 TFT, True color touch screen
Status indicator	LED
Data update frequency	5 minutes

Shine WebBox

It is a cost-effective and compact monitoring device, specially designed for solar power plant. Using stable Linux operating system with high-speed CPU, smartly record your system features. Provide local storage, easy wireless and TCP/IP configuration, and present plant data over Internet.

Features:

- ▶ A multi-functional and high-performance communication data logger;
- ▶ Keep user informed of the system's status at any time,
- ▶ Massive storage with flexible parameters setting, system information management, error prompt and record .
- ▶ Collects data and uploads information over the internet in near real-time to Growatt Shine Server platform.



Datasheet

Communication

Communication with inverters	RS 485 (Wire connection) ZigBee (Wireless connection)
Communication with PC	10/100 Mbit Ethernet
Communication range	RS 485: 1200m ZigBee: 300m (without obstacle) Ethernet: 100m

Electrical Data

Power adapter	Input: 100~240V,50/60Hz AC Output: 5V,2A DC
Power consumption	2.5W

Environmental Conditions

Ambient temperature	0 - 45°C
Relative air humidity	5%-95%

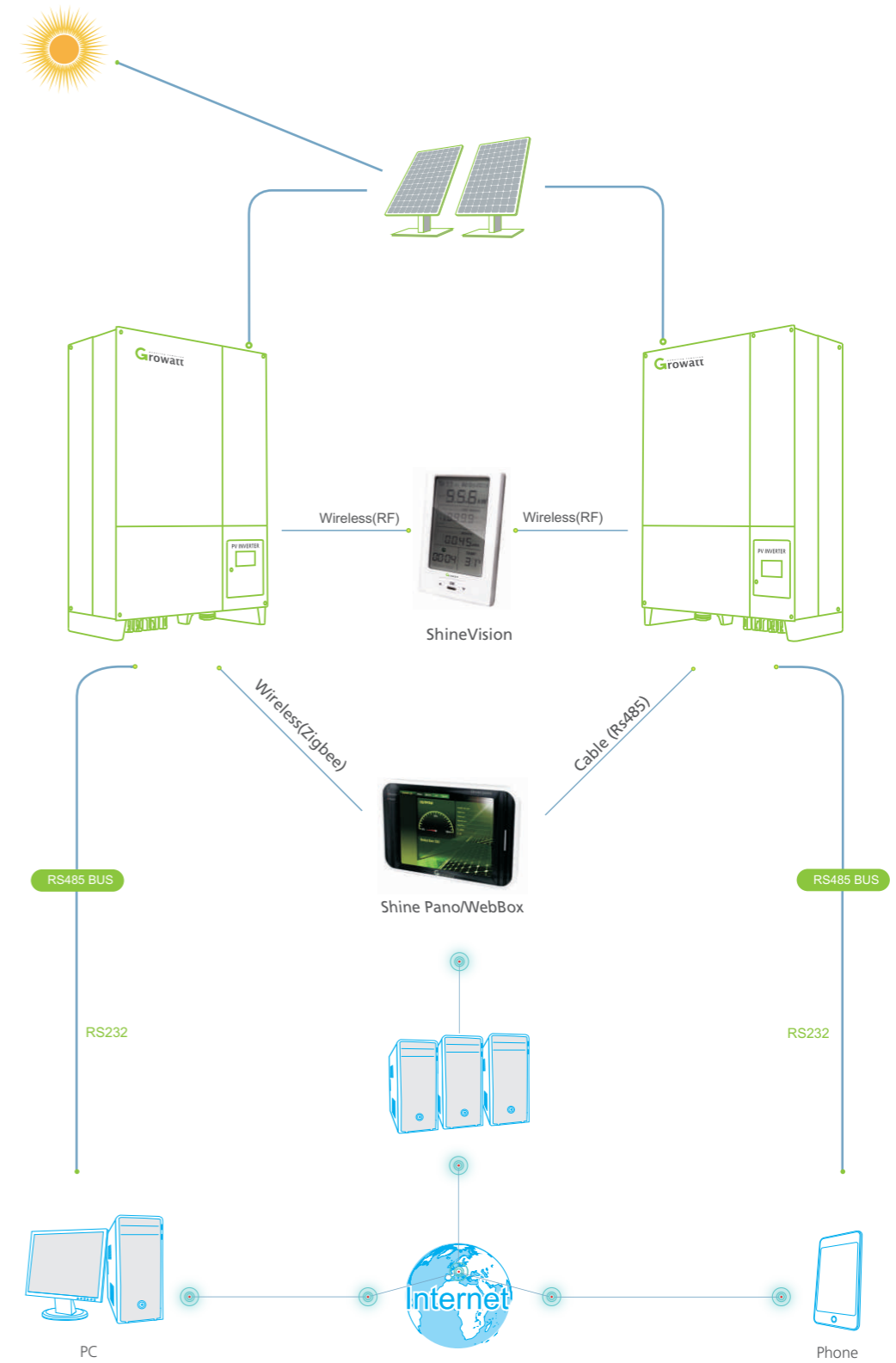
General Data

Dimensions(W/H/D)	185/125/30mm
Net weight	0.42kg
Mounting location	Indoor
Mounting type	Wall mounting , tabletop device
Status indicator	LED
Language	English
Data update frequency	5 minutes

Monitoring system

Growatt monitor system is diversified and highly intelligent. Shine Vision and Shine Pano provide PV plant owners and operators a web-enabled platform for real-time alerting, fault reporting, billing and facility managing to maximize system energy output while minimizing the costs.

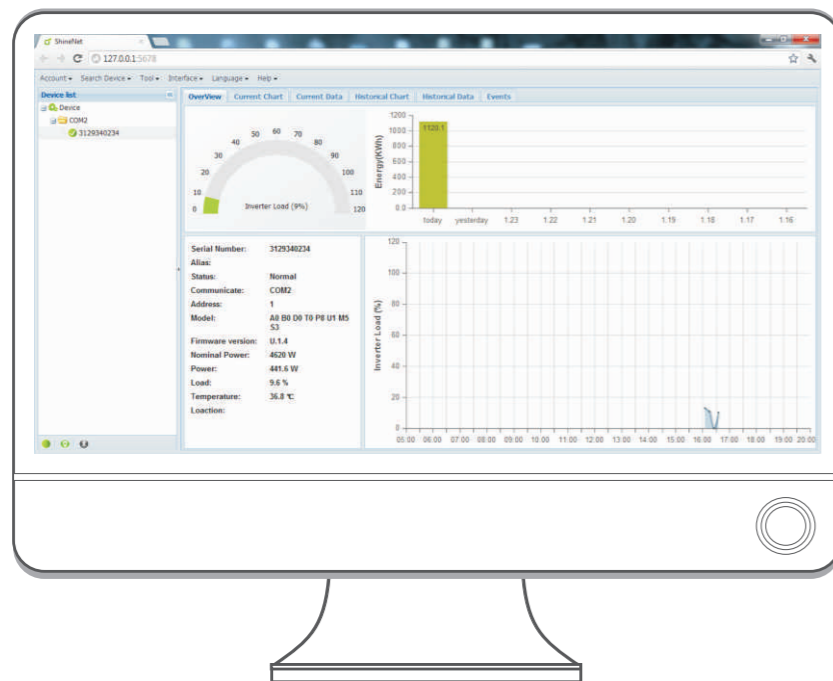
Through the powerful back-ups from our hardware and software, various communication protocols and interfaces, our customers can simply manage the portfolios of different systems-- from residential to commercial roof to utility scale--from any location of the world.



ShineNet provides an optimum solution to the system monitoring for residential customers. The free software is adapted to monitor the inverters from Growatt via RS232 or Bluetooth module. With the special designed function and friendly compact UI, it offers users a top-level intuitive graphical view of the plants under management and brings unprecedented user experience.

Features

- ▶ Monitor and record current data of inverters
- ▶ Record historical data
- ▶ Monitor and record event information of inverter
- ▶ Connect computer and inverter via RS232 and RS485 port (wire connection) or Bluetooth module (wireless connection)
- ▶ Remote access available for local area network



Languages

Available languages: English, German, Chinese

System requirements

Supported operating systems: Windows XP(SP2), Windows Vista(32-bit and 64-bit), Windows 7(32-bit and 64-bit)

Communication

Inverter communication: Bluetooth/RS232
 Max.number of devices: Bluetooth : 7 / RS232:1
 Protocol: Modbus RTU

Hardware (minimum requirement)

Processor: P3 800MHz(XP), P4 1GHz(vista, windows7)
 Main memory: 512MB(XP), 1GB(vista, windows7)
 Free hard drive space: 102MB (87MB JRE/15MB application)
 Resolution: 1024x768 pixels

Plant information

Plant overview: Quick overview of all inverter status, generated power, inverter load and other important data
 Current plant data: Displayed by intuitive chart or detailed list
 Historical plant data: Displayed by intuitive chart or detailed list
 Events: Rapid warning of event with pop-up dialog box, direct viewing of recorded events with highlight

Device information

Device overview: Easily get access to all inverter information
 Device setting: Simple configuration for power management
 Device data: Detailed information of specified inverter including historical and current data
 Events: Rapid warning of event with pop-up dialog box, direct viewing of recorded events with highlight

Shine Station

Customized and professional monitoring solutions are required regarding to commercial system and PV power station. Shine Station, regarded as the best choice, enables comprehensive analysis of system performance data and reliable management of any plant. With accurate monitoring and real-time alerting service, it indeed helps plant manager optimize operational decisions and maximize system energy output.

Features

- ▶ Monitor and manage up to 1000 devices
- ▶ Easy installation and configuration
- ▶ Ease of operation and maintenance
- ▶ Remote access available for local area network



Datasheet

Languages

Available languages: English, German, Chinese

Hardware (minimum requirements)

Processor: P3 800MHz(XP), P4 1GHz(vista, windows7)
 Memory: 512MB(XP), 1GB(vista, windows7)
 Free hard drive space: 107MB (87MB JRE / 20MB application)
 Resolution: 1024x768 pixels

System requirements

Supported operating systems: Windows XP (SP2), Windows Server 2003(recommended)
 Supported data logger: Shine WebBox, Shine Pano, Wi-Fi Module

Communication

Communication with Shine WebBox: Ethernet
 Communication with Shine Pano: Ethernet
 Communication with Wi-Fi Module: Ethernet

Max.number of devices

Shine WebBox/Pano/Wi-Fi Module: 60/60/500

Plant information

Plant overview: Quick yield overview of all your PV plants
 Device overview: Display of all important data about data logger, inverters, environment monitor, smart meter and other key devices
 Data update: 5 mins

Shine Server

Whether for residential system or commercial system, even for PV power station, Growatt could deliver a satisfactory monitoring solution based on Shine Server, which acts as a reliable, powerful and secure web-enabled platform. With flexible and sophisticated design, Shine Server provides highly interactive and immediate access to key system data at any time and any place. Special views are enabled accounting for the different requirements of different applicants and target groups. The powerful analysis and reporting functions help owners and operators to improve the productivity of PV plant and the efficiency of operations.

Features

- ▶ Ease of operation and maintenance
- ▶ Quick overview of all PV plant status
- ▶ Monitor and record several of PV plants with centralized management
- ▶ Professional analysis function to help maximize the system performance
- ▶ Real-time access to key performance worldwide via PC or mobile phones



Datasheet

Shine Server	
Languages	
Available languages	English, Chinese, French, Japanese
System requirements	
Supported operating systems	All
Recommended browsers	Internet Explorer as of version 8, Firefox as of version 5, Google Chrome as of version 14, Safari as of version 5, Opera as of version 11
Supported data logger	Shine WebBox, Shine Pano, Wi-Fi Module
Access	
Website	http://server.growatt.com
Plant information	
Plant overview	Quick yield overview of all your PV plants
Specified plant	All important data at a glance including energy output, yield gains, environmental status
Plant installation data	Summary of all plant information which contains installation data, location data and income data
Device overview	Display of all important data about data logger, inverters, environment monitor, smart meter and other key devices
Time periods	5 mins
Plant management	
Account	User could manage all PV plants with one same account
Monitoring	
Inverter status	All inverter running status are recorded automatically. The warning of fault is highlighted and immediate.
Status reporting	
Event reports	Timely e-mail reports on system fault and plant error.
Background operating	
Plant management	Add new plant, edit and delete existed plant
Device management	Intuitive operation to manage all devices
Inverter setting	simple parameter setting for inverters including power management

Datasheet

Wi-Fi Module	
Communication	
Frequency range	2.412GHz-2.484GHz
General data	
Dimensions (W/H/D)	135/79/29mm
Weight	63g
Protection rating	IP 65
operating temperature range	-25°C ~ +55°C

Choose Growatt

Choose golden service

7 X 24 global on line support

Growatt Photovoltaic Inverter

The cost of PV inverter is just a small proportion of the whole PV system, however the system operation and power generation are completely controlled by the inverter. Growatt PV inverter has been tested by many professional organizations, which is very applicable for residential solar system, as well as power plant.

High efficiency

On the PV market of developed countries, the national power grid conditions are relatively good. Therefore most of the countries choose more environmentally friendly and efficient multicrystalline silicon solar panel. For such applications, the Growatt transformerless inverters brings more stable and sustainable higher power generation. Growatt inverter can also be applied with parts of the noncrystalosilicon modules and concentrator modules.

Easy Installation

Easy wall mount installation, convenient AC/DC connections. Internal DC switch, automatic detection of grid safety and disconnect settings. By simple adjustment, Growatt inverter can be applied in different countries with different grids and safety standards.

Safe and reliable

Internal DC switch; AC/DC side safety protection and failure checking; communications by RS485, RS232, bluetooth, Wi-Fi.

Smart Monitoring

Growatt inverters can wirelessly communicated by RF technology, bluetooth, Wi-Fi. Using Mornitoring Server to realize power plant monitoring, system diagnostics and maintenance.

Warranty

All the Growatt inverter has 5 years standard warranty.

